

# **EXHIBIT**

# **B**

## Smith Economics Group, Ltd.

A Division of Corporate Financial Group

*Economics / Finance / Litigation Support*

*Stan V. Smith, Ph.D.*  
*President*

August 28, 2019

Mr. John M. Eubanks  
Motley Rice  
28 Bridgeside Blvd.  
Mt. Pleasant, SC 29464

Re: Cashman

Dear Mr. Eubanks:

You have asked me to calculate the value of certain losses subsequent to the death of William Cashman. These losses are: (1) the loss of wages and employee benefits; (2) the loss of household/family services, including the loss of housekeeping and household management services; and (3) the loss of the value of life ("LVL"), also known as loss of enjoyment of life.

### QUALIFICATIONS AND EXPERIENCE

I am President of Smith Economics Group, Ltd., headquartered in Chicago, IL, which provides economic and financial consulting nationwide. I have worked as an economic and financial consultant since 1974, after completing a Research Internship at the Federal Reserve, Board of Governors, in Washington, D.C. My curriculum vitae lists all my publications in the last 10 years and beyond.

I received my Bachelor's Degree from Cornell University. I received a Master's Degree and my Ph.D. in Economics from the University of Chicago; Gary S. Becker, Nobel Laureate 1992, was my Ph.D. thesis advisor. The University of Chicago is one of the world's preeminent institutions for the study of economics, and the home of renowned research in the law and economics movement.

As President of Smith Economics, I have performed economic analyses in a great variety of engagements, including damages analysis in personal injury and wrongful death cases, business valuation, financial analysis, antitrust, contract losses, a wide range of class action matters, employment discrimination, defamation, and intellectual property valuations including evaluations of reasonable royalty.

I have more than 40 years of experience in the field of economics. I am a member of various economic associations and served for three years as Vice President of the National Association of Forensic Economics (NAFE) which is the principal association in the field. I was also on the Board of Editors of

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the peer-reviewed journal, the Journal of Forensic Economics, for over a decade; I have also published scholarly articles in this journal. The JFE is the leading academic journal in the field of Forensic Economics.

I am the creator and founder of Ibbotson Associates' Stock, Bonds, Bills, and Inflation (SBBI) Yearbook, Quarterly, Monthly, and SBBI/PC Services. SBBI is currently published by Duff & Phelps and is also available on various Morningstar, Inc. software platforms. SBBI is widely relied upon and regarded as the most accepted and scholarly reference by the academic, actuarial and investment community, and in courts of law. The SBBI series, which acknowledges my "invaluable role" as having "originated the idea" while Managing Director at Ibbotson Associates, is generally regarded by academics in the field of finance as the most widely accepted source of statistics on the rates of return on investment securities.

I wrote the first textbook on Forensic Economic Damages that has been used in university courses in various states; as an adjunct professor, I created and taught the first course in Forensic Economics nationwide, at DePaul University in Chicago. I have performed economic analysis in many thousands of cases in almost every state since the early 1980s.

### BACKGROUND

William Cashman was a 60.5-year-old, Caucasian, married male, who was born on [REDACTED], and died on September 11, 2001. Mr. Cashman's remaining life expectancy is estimated at 21.5 years. This data is from the National Center for Health Statistics, United States Life Tables, 2017, Vol. 68, No. 7, National Vital Statistics Reports, 2019. I assume an estimated trial or resolution date of January 1, 2020.

In order to perform this evaluation, I have reviewed the following materials: (1) tax returns from 1998 through 2001; (2) background information for William Cashman; (3) an economic report by Mr. Donald Frankenfeld dated August 2, 2006; and (4) the case information form.

My methodology for estimating the losses, which is explained below, is generally based on past wage growth, interest rates, and consumer prices, as well as studies regarding the value of life. The effective net discount rate using statistically average wage growth rates and statistically average discount rates is 0.25 percent.

My estimate of the real wage growth rate is 1.00 percent per year. This growth rate is based on Business Sector, Hourly Compensation growth data from the Major Sector Productivity and

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Costs Index found at the U.S. Bureau of Labor Statistics website at [www.bls.gov/data/home.htm](http://www.bls.gov/data/home.htm), Series ID: PRS84006103, for the real increase in wages primarily for the last 20 years.

My estimate of the real discount rate is 1.25 percent per year. This discount rate is based on primarily the rate of return on short-term U.S. Treasury investment for the last 20 years. The data is from the statistical series H.15 Selected Interest Rates, published by the Board of Governors of the Federal Reserve System found at [www.federalreserve.gov](http://www.federalreserve.gov). This data is also published in the Economic Report of the President Table for "Bond yields and interest rates" for the real return on U.S. Treasury investments.

Estimates of real growth and discount rates are net of inflation based on the Consumer Price Index (CPI-U), published in monthly issues of the U.S. Bureau of Labor Statistics, CPI Detailed Report (Washington, D.C.: U.S. Government Printing Office) and available at the U.S. Bureau of Labor Statistics website at [www.bls.gov/data/home.htm](http://www.bls.gov/data/home.htm), Series ID: CUUR0000SA0. The rate of inflation for the past 20 years has been 2.16 percent.

### I. LOSS OF WAGES AND EMPLOYEE BENEFITS - Annual Employment

Tables 1 through 9 show the loss of wages and benefits. Mr. Cashman was a iron worker in Local 46 Metallic Lathers Union and Reinforcing Iron Workers New York City and Vicinity at the time of his death. Mr. Cashman followed in his father's footsteps and joined Local 46 after completing his service to the Air Force in 1963. Mr. Cashman worked through Local 46 as an ironworker, licensed welder, and lather. He helped build many buildings in New York City, including installing support structures for the interior ceilings in the World Trade Center buildings in the 1960s. In addition to his work through the union, Mr. Cashman taught welding two nights per week to the apprentices at Local 46 to give back to the community. Mr. Cashman was planning to run for business agent for Local 46, and he wanted to become a supervisor. Mr. Cashman intended to work until he was age 70. Based on Mr. Cashman's tax returns, his earnings in 1999 and 2000 averaged \$74,468 in year 2000 dollars.

Based on the Agreement between The Independent Contractor and Local #46 Metallic Lathers Union and Reinforcing Iron Workers New and Vicinity, July 1, 1999 - June 30, 2002, the hourly pay rate effective July 1, 1999 was \$28.40 per hour, and total compensation increases were \$2.60 per hour effective July 1, 2000 and \$3.00 per hour effective July 1, 2001. Benefits effective July 1, 1999 were \$7.25 per hour for Annuity Fund, \$6.31 per hour for Welfare, \$4.35 per hour for Pension, \$0.53 per hour for the Apprenticeship Fund, \$0.08 per hour for Scholarship Fund, \$0.02 per hour for Promotional Fund, and \$0.10 per hour for Advancement Fund, resulting in total compensation of \$47.04 per hour as of

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July 1, 1999. Based on the Memorandum of Agreement dated July 11, 2002, total compensation was increased by \$3.30 per hour effective July 1, 2002, \$3.20 per hour effective July 1, 2003, and \$3.20 per hour effective July 1, 2004. This results in increases in compensation of 5.79 percent in 2001, 6.16 percent in 2002, 5.99 percent in 2003, and 5.56 percent in 2004. Based on the Local 46 Wage and Fringe Benefits Effective July 1, 2016 to June 30, 2017, the hourly rate was \$42.90 for wages, \$12.00 for Annuity, \$10.07 for the Welfare Fund, \$9.40 for Pension, \$0.40 for the Scholarship Fund, \$0.30 for Ironworkers Impact, \$0.38 for LMCT, \$0.50 for Apprenticeship, \$0.03 for the Promotional Fund, and \$0.20 for the Advancement Fund, resulting in total compensation of \$76.18 per hour. Based on the Local 46 Wage and Fringe Benefits Effective July 1, 2018 to June 30, 2019, the hourly rate was \$44.65 for wages, \$12.00 for Annuity, \$12.32 for the Welfare Fund, \$9.40 for Pension, \$0.40 for the Scholarship Fund, \$0.30 for Ironworkers Impact, \$0.38 for LMCT, \$0.50 for Apprenticeship, \$0.03 for the Promotional Fund, and \$0.20 for the Advancement Fund, resulting in total compensation of \$80.18 per hour. Averaging the July 2016 and July 2018 rates results in an average rate for 2017 of \$78.18 per hour, which is an average annual increase from 2004 of 1.96 percent. Union dues increase from \$1.40 per hour in July 1999 to \$1.63 per hour in July 2019, decreasing from 4.93 percent of wages in 1999 to 3.65 percent in 2018.

The wage estimate is illustrated at the average of Mr. Cashman's 1999 and 2000 earnings of \$74,468 in year 2000 dollars. The wage estimate is grown at actual annual union compensation growth of 5.79 percent in 2001, 6.16 percent in 2002, 5.99 percent in 2003 and 5.56 percent in 2004. Wages from 2005 through 2020 are conservatively grown at 1.96 percent based on the average union compensation growth from 2004 to 2017. Future wages are grown at zero percent real. Union dues of 4.3 percent are deducted from the wages based on the average of the union dues percentage of 4.92 percent in 1999 and 3.65 percent in 2018.

Employee benefit estimates are based on actual benefit information from Local 46 Metallic Lathers Union and Reinforcing Iron Workers New York and Vicinity as well as data from the U.S. Department of Labor, Bureau of Labor Statistics, Employer Cost of Employee Compensation - December 2018, 2019, found at [www.bls.gov/ect](http://www.bls.gov/ect). Based on the benefits from the contract described above, the total benefits as of July 1, 1999 were \$18.64 per hour, which is 65.63 percent of the wage rate. By July 2018, the benefits increased to \$35.53 per hour, which is 79.6 percent of wages. Since I increase wages by the total compensation growth, I use the 1999 benefit percentage and add Social Security of 6.2 percent, resulting in a total benefit percentage of 71.83 percent. I have assumed that employee benefits grow at the same rate as wages and are discounted to present value at the same discount rate. Since these tables



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assume annual work, I do not include employee benefits relating to unemployment, injury, illness or disability; benefits are estimated at 71.83 percent of wages.

Personal consumption is an offset of the income. I use a personal consumption offset based on a study by Ruble, Patton, and Nelson, "Patton-Nelson Personal Consumption Tables 2011-12," Journal of Legal Economics, Vol. 21, No. 1, 2014, pp. 41-55, based on data from the U.S. Department of Labor, Bureau of Labor Statistics, "Consumer Expenditure Survey, 2011-12," Washington DC, 2012, which shows personal consumption for a 2-person household to be 17.4 percent.

I assume annual employment each year and show the accumulation through life expectancy. While these tables are calculated through the end of life expectancy, the losses from working through any age can be read off the table.

Based on the above assumptions, my opinion of the wage loss is \$3,164,903 ▶ Table 9; this figure assumes work to age 82.0, but the ability to work through any assumed age may be read from Table 9; for example, the loss to age 70 is \$1,355,856.

### II. LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOUSEHOLD MANAGEMENT SERVICES

Tables 10 through 12 show the pecuniary loss of tangible housekeeping chores and household management services. The number of hours of housekeeping and household management services for married males who work full-time with no children is 13.85 hours per week through 2011 and for married, retired males is 21.57 hours per week thereafter. This data is based on the American Time Use Survey published by the Bureau of Labor Statistics, [www.bls.gov/tus](http://www.bls.gov/tus), usefully summarized in a publication by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018.

The hourly value of the housekeeping and household management services is based on the mean hourly earnings of carpenters; maintenance and repair workers; painters, construction and maintenance; childcare workers; waiters and waitresses; cooks, private household; laundry and dry-cleaning workers; maids and housekeeping cleaners; landscaping and groundskeeping workers; bookkeeping, accounting and auditing clerks; and taxi drivers and chauffeurs, which is \$16.54 per hour in year 2018 dollars. This wage data is based on information from the U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2018 National Occupational Employment and Wage Statistics found at [www.bls.gov/oes](http://www.bls.gov/oes). This figure is corroborated by the average hourly values published by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018, which is

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also based on the BLS Occupational Employment Statistics. A discussion of these services can be found in the **Household Services Valuation Appendix**. The hourly value of these services grows at the same rate as the wage growth rate discussed above.

I assess such services at their estimated market value which includes a conservative estimate of 50 percent hourly non-wage component reasonably charged by agencies or free-lance individuals who supply such services on a part-time basis, and who are responsible for advertising, hiring and vetting, training, insuring and bonding the part-time service provider, and who are also responsible for pay-related costs such as social security contributions, etc. If a person were to hire a free-lance employee directly instead of going through an agency, then he or she would have to take on the responsibility for all the non-wage costs that the agency would otherwise incur and then charge for. The money the person would pay directly in wages would be only a portion of the total costs. The total costs would include those items discussed above that the agency would otherwise incur.

Adding the non-wage component to the hourly wage is consistent with labor market theory and competitive market behavior. Peer-reviewed economic research supports this theory and shows that the non-wage costs can average up to 300 percent for the wage. See, for example, Cushing, Matthew J. and David I. Rosenbaum, "Valuing Household Services: A New Look at the Replacement Cost Approach," Journal of Legal Economics, Vol 19, No. 1, 2012, pp. 37-60, wherein the authors found that non-wage costs exceed wage costs by 167 percent. This is more than triple the 50 percent non-wage costs amount I use, discussed above. Also see Smith, David A., Stan V. Smith, and Stephanie R. Uhl, "Estimating the Value of Family Household Management Services: Approaches and Markups," Forensic Rehabilitation & Economics, Vol 3, No. 2, 2010, pp. 85-94. According to this research, the statistical probability is 99 percent that the non-wage costs exceed 250 percent of the wage cost. The use of only a 50 percent non-wage cost makes my estimate very conservative, and it far more than compensates for two possible variations: variations in the national wage depending on locality, and variations in different types of services actually performed in the household. Thus even if one or more of the different types of services are not performed, and even if the services are provided in low wage areas, my use of the low, 50 percent non-wage costs more than compensates for these factors.

According to Merry Maids, a national home cleaning service agency, the charges for their services within the largest 100 Metropolitan Statistical Areas with populations of 500,000 and up range from \$40 to \$65 per hour, averaging \$49 per hour, in 2012. This hourly rate reflects non-wage costs of 250 percent of wages, and after adjusting for market factors, is four times the

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non-wage costs figure that I use, resulting in an hourly rate of more than double the rate that I use. Thus my use of only a 50 percent addition for non-wage costs is, in fact, very conservative.

Based on these assumptions, and William Cashman's life expectancy of 82.0 years, my opinion of the loss of the value of housekeeping and household management services is \$440,378 ▶ Table 12.

### III. LOSS OF VALUE OF LIFE

Tables 13 through 15 show the loss of the value of life. Economists have long agreed that life is valued at more than the lost earnings capacity. My estimate of the value of life is based on many economic studies on what we, as a contemporary society, actually pay to preserve the ability to lead a normal life. The studies examine incremental pay for risky occupations as well as a multitude of data regarding expenditure for life savings by individuals, industry, and state and federal agencies. Based on the average value of a statistical life and life expectancy of 82.0 years, my opinion of the loss of the value of life for William Cashman is \$2,679,518 ▶ Table 15.

My estimate of the value of life is consistent with estimates published in other studies that examine and review the broad spectrum of economic literature on the value of life. Among these is "The Plausible Range for the Value of Life," Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, by T. R. Miller. This study reviews 67 different estimates of the value of life published by economists in peer-reviewed academic journals. The Miller results, in most instances, show the value of life to range from approximately \$1.6 million to \$2.9 million dollars in year 1988 after-tax dollars, with a mean of approximately \$2.2 million dollars. In "The Value of Life: Estimates with Risks by Occupation and Industry," Economic Inquiry, Vol. 42, No. 1, May 2003, pp. 29-48, Professor W. K. Viscusi estimates the value of life to be approximately \$4.7 million dollars in year 2000 dollars. An early seminal paper on the value of life was written by Richard Thaler and Sherwin Rosen, "The Value of Saving a Life: Evidence from the Labor Market." in N.E. Terlickyj (ed.), Household Production and Consumption. New York: Columbia University Press, 1975, pp. 265-300. The Meta-Analyses Appendix to this report reviews additional literature suggesting a value of life of approximately \$5.4 million in year 2008 dollars.

Because it is generally accepted by economists, the economic methodology for the valuation of life has been found to meet the Daubert and Frye standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value



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of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. Proof of general acceptance and other standards is found in a discussion of the extensive references to the scientific economic peer-reviewed literature on the value of life listed in the **Value of Life Appendix** to this report.

The underlying, academic, peer-reviewed studies fall into two general groups: (1) consumer behavior and purchases of safety devices; (2) wage risk premiums to workers; in addition, there is a third group of studies consisting of cost-benefit analyses of regulations. For example, one consumer safety study analyzes the costs of smoke detectors and the lifesaving reduction associated with them. One wage premium study examines the differential rates of pay for dangerous occupations with a risk of death on the job. Just as workers receive shift premiums for undesirable work hours, workers also receive a higher rate of pay to accept a increased risk of death on the job. A study of government regulation examines the lifesaving resulting from the installation of smoke stack scrubbers at high-sulphur, coal-burning power plants. As a hypothetical example of the methodology, assume that a safety device such as a carbon monoxide detector costs \$46 and results in lowering a person's risk of premature death by one chance in 100,000. The cost per life saved is obtained by dividing \$46 by the one in 100,000 probability, yielding \$4,600,000. Overall, based on the peer-reviewed economic literature, I estimate the central tendency of the range of the economic studies to be approximately \$4.9 million in year 2019 dollars.

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Other factors may be weighed to determine if these estimated losses for William Cashman should be adjusted because of special qualities or circumstances that economists do not as yet have a methodology for analysis.

In each set of tables, the estimated losses are calculated from September 11, 2001 through an assumed trial or resolution date of January 1, 2020, and from that date thereafter. The last table in each set accumulates the past and future estimated losses. These estimates are provided as a tool, an aid, and a guide to assist the evaluation by others.

All opinions expressed in this report are clearly labeled as such. They are rendered in accordance with generally accepted standards within the field of economics and are expressed to a reasonable degree of economic certainty. Estimates, assumptions, illustrations and the use of benchmarks, which are not opinions,

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but which can be viewed as hypothetical in nature, are also clearly disclosed and identified herein.

In my opinion, it is reasonable for experts in the field of economics and finance to rely on the materials and information I reviewed in this case for the formulation of my substantive opinions herein.

If additional information is provided to me, which could alter my opinions, I may incorporate any such information into an update, revision, addendum, or supplement of the opinions expressed in this report.

If you have any questions, please do not hesitate to call me.

Sincerely,



Stan V. Smith, Ph.D.  
President

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## APPENDIX: HOUSEHOLD SERVICES VALUATION

Courts have long recognized claims for the value of tangible household family services as an element of damages in personal injury and wrongful death cases, as an aspect of the pecuniary loss in such cases. These services are those that are provided by the injured family member to himself or herself and to other family members, without charge or cost. Other family members who may receive such services can include spouses, children, parents or siblings; such family members do not necessarily have to reside in the same household to receive such services.

Economists and courts have also long recognized that an appropriate method in valuing such tangible services is to value their estimated market-based costs by examining costs paid in labor markets that provide generally comparable services for. Thus, economists can value the service by looking at market equivalents from which a pecuniary standard can be established. This approach is set forth in the 1913 U.S. Supreme Court Decision, Michigan Central Railroad Company v. Vreeland, 227 U.S. 59 (1913). So this method is a century old.

The Supreme Court's suggesting in valuing compensable services in the Vreeland decision is a standard that is not rigid, but actually rather general: "[The] pecuniary loss or damage must be one which can be measured by some standard.... Compensation for such loss manifestly does not include damages by way of recompense for grief or wounded feelings." Michigan Central v. Vreeland.

Examples of lost household services that used to be performed by persons (whether fatally or non-fatally injured) can include physical chores such as mowing the lawn, painting the house, cleaning the windows, doing the laundry, washing and repairing the car, preparing the meals and doing the dishes, among others. For many decades economists have met the Supreme Court's general standard by using labor market equivalents for cooks, laundry workers, gardeners, maids, etc. in valuing the physical chores regarding housekeeping services.

Additionally, economists have recognized that tangible services to family members include services well beyond the physical housekeeping chores. For example, William G. Jungbauer and Mark J. Odegard, in Maximizing Recovery in FELA Wrongful Death Actions, in Assessing Family Loss in Wrongful Death Litigation: The Special Roles of Lost Services and Personal Consumption, Lawyers & Judges Publishing Co., 1999, pp. 284, indicate that a complete analysis of all services performed by family members includes much, much more than the physical housekeeping chores. Frank D. Tinari, in a peer-reviewed, scientific, economic journal article "Household Services: Toward a More Comprehensive Measure," Journal of Forensic Economics, Vol. 11, No. 3, Fall

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1998, pp. 253-265, expresses the same view. Dr. Tinari has been a tenured Professor at Seton Hall University, and is a former president of the National Association of Forensic Economics. There has been no peer-reviewed critique of this article since it appeared.

Jungbauer and Odegard indicate that a person may have provided services of many other professions such as that of a chauffeur, driving other family members to appointments, or that of a security guard, especially regarding the injury to a male spouse, etc. Every family member acts as a companion to other family members. And it is common for family members to act as counselors for one another, typically providing advice and counsel on important personal, family, medical, financial, career or other issues. The marketplace can and does value such items of loss. If the person cannot provide these services, or does so at a reduced capacity or rate, there is a distinct and definite loss to the other family members. These losses have a definite and easily measurable pecuniary value. Vreeland requires only that a "reasonable expectation" of loss of services be proven and that such loss be valued by some standard, presumably a reasonably-based economic standard, to allow recovery.

The economic literature on recovery of loss of services discusses an estimated market-oriented valuation cost method to assess the pecuniary value of the loss of accompaniment services, as well as the value of advice, guidance and counsel services that family members provide to one another, within a broadly defined scope of family services. See, for example, Frank D. Tinari, "Household Services: Toward a More Comprehensive Measure, " Journal of Forensic Economics, Vol. 11, No. 3, Fall 1998, pp. 253-265.

Finally, according to Chief Justice Robert Wilentz of the Supreme Court of New Jersey, in Green v. Bittner, 85 NJ 1, 1980, pp. 12, accompaniment services, to be compensable, must be that which would have provided services substantially equivalent to those provided by the companions often hired today by the aged or infirm, or substantially equivalent to services provided by nurses or practical nurses; and its value must be confined to what the marketplace would pay a stranger with similar qualifications for performing such services.

In valuing the household services that are provided by family members to one another, beyond the physical housekeeping chores, both the U.S Supreme Court and the New Jersey Supreme Court discuss looking at labor markets for the equivalent value of such services. This methodology is identical to the traditional approach that economists have been using for over four decades in valuing the physical chores involved in housekeeping services.

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## APPENDIX: VALUE OF LIFE

The economic methodology for the valuation of life has been found to meet the Daubert and Frye standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. The Daubert standard sets forth four criteria:

1. Testing of the theory and science
2. Peer Review
3. Known or potential rate of error
4. Generally accepted.

**Testing of the theory and science** has been accomplished over the past four decades, since the 1960s. Dozens of economists of high renown have published over a hundred articles in high quality, peer-reviewed economic journals measuring the value of life. The value of life theories are perhaps among the most well-tested in the field of economics, as evidenced by the enormous body of economic scientific literature that has been published in the field and is discussed below.

**Peer Review** of the concepts and methodology have been extraordinarily extensive. One excellent review of this extensive, peer-reviewed literature can be found in "The Value of Risks to Life and Health," W. K. Viscusi, Journal of Economic Literature, Vol. 31, December 1993, pp. 1912-1946. A second is "The Value of a Statistical Life: A Critical Review of Market Estimates throughout the World." W. K. Viscusi and J. E. Aldy, Journal of Risk and Uncertainty, Vol. 27, No. 1, November 2002, pp. 5-76. Additional theoretical and empirical work by Viscusi, a leading researcher in the field, can be found in: "The Value of Life", W. K. Viscusi, John M. Olin Center for Law, Economics, and Business, Harvard Law School, Discussion Paper No. 517, June 2005. An additional peer-reviewed article discusses the application to forensic economics: "The Plausible Range for the Value of Life," T. R. Miller, Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, which discusses the many dozens of articles published in other peer-reviewed economic journals on this topic. This concept is discussed in detail in "Willingness to Pay Comes of Age: Will the System Survive?" T. R. Miller, Northwestern University Law Review, Summer 1989, pp. 876-907, and "Hedonic Damages in Personal Injury and Wrongful Death



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Litigation," by Stan V. Smith in Gaughan and Thornton, eds., Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol. 74, pp. 39-59, JAI Press, Greenwich, CT, 1993. Kenneth Arrow, a Nobel Laureate in economics, discusses this method for valuing life in "Invaluable Goods," Journal of Economic Literature, Vol. 35, No. 2, 1997, pp. 759. See the Meta-Analyses Appendix for an additional review of the literature.

**The known or potential rate of error** is well researched. All of these articles discuss the known or potential rate of error, well within the acceptable standard in the field of economics, generally using a 95% confidence rate for the statistical testing and acceptance of results. There are few areas in the field of economics where the known or potential rate of error has been as well-accepted and subject to more extensive investigation.

**General Acceptance** of the concepts and methodology on the value of life in the field of economics is extensive. This methodology is and has been generally accepted in the field of economics for many years. Indeed, according to the prestigious and highly-regarded research institute, The Rand Corporation, by 1988, the peer-reviewed scientific methods for estimating the value of life were well-accepted: "Most economists would agree that the willingness-to-pay methodology is the most conceptually appropriate criterion for establishing the value of life," Computing Economic loss in Cases of Wrongful Death, King and Smith, Rand Institute for Civil Justice, R-3549-ICJ, 1988.

While first discussed in cutting edge, peer-reviewed economic journals, additional proof of general acceptance is now indicated by the fact that this methodology is now taught in standard economics courses at the undergraduate and graduate level throughout hundreds of colleges and universities nationwide as well as the fact that it is taught and discussed in widely-accepted textbooks in the field of law and economics: Economics, Sixth Edition, David C. Colander, McGraw-Hill Irwin, Boston, 2006, pp. 463-465; this introductory economics textbook is the third most widely used textbook in college courses nationwide. Hamermesh and Rees's The Economics of Work and Pay, Harper-Collins, 1993, Chapter 13, a standard advanced textbook in labor economics, also discusses the methodology for valuing life. Other textbooks discuss this topic as well. Richard Posner, a Judge and former Chief Judge of the U.S. Court of Appeals for the highly regarded 7th Circuit and Senior Lecturer at the University of Chicago Law School, one of most prolific legal writers in America, details the Value of Life approach in his widely used textbooks: Economic Analysis of Law, 1986, Little Brown & Co., pp. 182-185 and Tort Law, 1982, Little Brown & Co., pp. 120-126.

As further evidence of general acceptance in the field, some surveys (albeit non-scientific) published in the field of

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forensic economics show that hundreds of economists nationwide are now familiar with this methodology and are available to prepare (and critique) forensic economic value of life estimates. Indeed, some economists who indicate they will prepare such analysis for plaintiffs also are willing to critique such analysis for defendants, as I have done. That an economist is willing to critique a report does not indicate that he or she is opposed to the concept or the methodology, but merely available to assure that the plaintiff economist has employed proper techniques. The fact that there are economists who indicate they do not prepare estimates of value of life is again no indication that they oppose the methodology: many claim they are not familiar with the literature and untrained in this area. While some CPAs and others without a degree in economics have opposed these methods, such professionals do not have the requisite academic training and are unqualified to make such judgements. However, as in any field of economics, this area is not without any dissent. General acceptance does not mean universal acceptance.

Additional evidence of general acceptance in the field is found in the teaching of the concepts regarding the value of life. Forensic Economics is now taught as a special field in a number of institutions nationwide. I taught what is believed to be the first course ever presented in the field of Forensic Economics at DePaul University in Spring, 1990. My own book, Economic/Hedonic Damages, Anderson, 1990, and supplemental updates thereto, co-authored with Dr. Michael Brookshire, a Professor of Economics in West Virginia, has been used as a textbook in at least 5 colleges and universities nationwide in such courses in economics, and has a thorough discussion of the methodology. Toppino et. al., in "Forensic Economics in the Classroom," published in The Earnings Analyst, Journal of the American Rehabilitation Economics Association, Vol. 4, 2001, pp. 53-86, indicate that hedonic damages is one of 15 major topic areas taught in such courses.

Lastly, general acceptance is found by examining publications in the primary journal in the field of Forensic Economics, which is the peer-reviewed Journal of Forensic Economics, where there have been published many articles on the value of life. Some are cited above. Others include: "The Econometric Basis for Estimates of the Value of Life," W. K. Viscusi, Vol 3, No. 3, Fall 1990, pp. 61-70; "Hedonic Damages in the Courtroom Setting." Stan V. Smith, Vol. 3, No. 3, Fall 1990, pp. 41-49; "Issues Affecting the Calculated Value of Life," E. P. Berla, M. L. Brookshire and Stan V. Smith, Vol 3, No. 1, 1990, pp. 1-8; "Hedonic Damages and Personal Injury: A Conceptual Approach." G. R. Albrecht, Vol. 5., No. 2, Spring/Summer 1992, pp. 97-104; "The Application of the Hedonic Damages Concept to Wrongful and Personal Injury Litigation." G. R. Albrecht, Vol. 7, No. 2, Spring/Summer 1994, pp. 143-150; and also "A Review of the Monte Carlo Evidence Concerning Hedonic Value of Life Estimates," R. F.

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Gilbert, Vol. 8, No. 2, Spring/Summer 1995, pp. 125-130. Professor Ike Mathur, while Chairman of the Department of Finance at Southern Illinois University wrote an article on how the value of life studies can be used to provide a basis for estimating the value of life per year in application to litigation. This article corroborates my approach: "Estimating Value of Life per Life Year." I. Mathur, Journal of Forensic Economics, Vol. 3, No. 3, 1990, pp. 95-96. As do many of the authors of applications of the value of life literature to litigation economics, Professor Mathur has frequently testified in court, and courts have admitted his testimony.

It is important to note that this methodology is endorsed and employed by the U. S. Government as the standard and recommended approach for use by all U. S. Agencies in valuing life for policy purposes, as mandated in current and past Presidential Executive Orders in effect since 1972, and as discussed in "Report to Congress on the Costs and Benefits of Federal Regulations," Office of Management and Budget, 1998, and "Economic Analysis of Federal Regulations Under Executive Order 12866," Executive Office of the President, Office of Management and Budget, pp. 1-37, and "Report to the President on Executive Order No. 12866," Regulatory Planning and Review, May 1, 1994, Office of Information and Regulatory Affairs, Office of Management and Budget. Prior presidents signed similar orders as discussed in "Federal Agency Valuations of Human life," Administrative Conference of the United States, Report for Recommendation 88-7, December 1988, pp. 368-408. 926

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## APPENDIX: META-ANALYSES AND VALUE OF LIFE RESULTS SINCE 2000

Below I list the principal systematic reviews (meta-analyses), since the year 2000, of the value of life literature, and the values of a statistical life that they recommend. In statistics, a meta-analysis combines the results of several studies that address a set of related research hypotheses. Meta-analysis increase the statistical power of studies by analyzing a group of studies and provide a more powerful and accurate data analysis than would result from analyzing each study alone. Based on those reviews, the Summary Table suggests a best estimate. The following table summarizes the studies and their findings.

These statistically based studies place the value between \$4.4 and \$7.5 million, with \$5.9 million in year 2005 dollars representing a conservative yet credible estimate of the average (and range midpoint) of the values of a statistical life published in the studies in year 2005 dollars. Net of human capital, a credible net value of life based on all these literature reviews to be \$4.8 million in year 2005 dollars, or \$5.4 million in year 2008 dollars.

The actual value that I use, \$4.1 million in year 2008 dollars (\$4.9 million in year 2019 dollars) is approximately 24 percent lower than a conservative average estimate based on the credible meta-analyses. This value was originally based on a review conducted in the late 1980s, averaging the results published by that time. I have increased that late 1980s value only by inflation over time, despite the fact a review of literature over the years since that time has put obvious upward pressure on the figure that I use.

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## VALUE OF STATISTICAL LIFE SUMMARY TABLE

Mean and range of value of statistical life estimates (in 2005 dollars) from the best meta-analyses and systematic reviews since 2000 and characteristics of those reviews.

Study	Formal Meta-Analysis?	Number of Values	Best Estimate (2005 Dollars)	Range	Context
Miller 2000	Yes	68 estimates	\$5.1M	\$4.5-\$6.2M	US estimate from all
Mrozek & Taylor 2002	Yes	203 estimates	\$4.4M	+ or - 35%	Labor market
Viscusi & Aldy 2003	Yes	49 estimates	\$6.5M	\$5.1-\$9.6M	Labor market, US estimate from all
Kochi et al. 2006	Yes	234 estimates	\$6.0M	+ or - 44%	Labor market survey
Bellavance 2006 (published in 2009)	Yes	37 estimates	\$7.5M	+ or - 19%	Labor market

Adapted from Ted R. Miller's paper "Hedonic Damages," Journal of Forensic Economics, Vol. 20, No. 2 (October 2008), pp. 137-153.



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Miller (2000) started from the Miller 1989 JFE estimates and used statistical methods to adjust for differences between studies. It also added newer studies, primarily ones outside the United States. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Miller, Ted R, "Variations between Countries in Values of Statistical Life", Journal of Transport Economics and Policy, Vol. 34, No. 2 (May 2000), pp. 169-188.

Mrozek and Taylor (2002) searched intensively for studies of the value of life implied by wages paid for risky jobs. They coded all values from each study rather than a most appropriate estimate. A statistical analysis identified what factors accounted for the differences in values between studies. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Mrozek, Janusz R. and Laura O. Taylor, "What Determines the Value of Life? A Meta-Analysis", Journal of Policy Analysis and Management, Vol. 21, No. 2 (2002), pp. 253-270.

Viscusi and Aldy (2003) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. W.K. Viscusi and J.E. Aldy, "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World", Journal of Risk and Uncertainty, Vol. 27, No. 1 (2003), pp. 5-76.

Kochi et al. (2006) searched intensively for studies of the value of life implied by wages and coded all values from each study rather than a most appropriate estimate. They did not filter study quality carefully. The best estimate was derived by statistical methods based on the distribution of the values within and across studies. Kochi, Ikuho, Bryan Hubbell, and Randall Kramer, "An Empirical Bayes Approach to Combining and Comparing Estimates of the Value of a Statistical Life for Environmental Policy Analysis", Environmental and Resource Economics, Vol. 34 (2006), pp. 385-406.

Bellavance et al. (2009) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. Bellavance, Francois, Georges Dionne, and Martin Lebeau, "The Value of a Statistical Life: A Meta-Analysis with a Mixed Effects Regression Model," Journal of Health Economics, Vol. 28, Issue 2, (2009), pp. 444-464. 3A22

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## SUMMARY OF LOSSES FOR WILLIAM CASHMAN

TABLE *****	DESCRIPTION *****	ESTIMATE *****
	<u>EARNINGS</u>	
	LOSS OF WAGES & BENEFITS, NET OF PERSONAL CONSUMPTION	
9	Annual Employment to age 70	\$1,355,856
	----- <u>HOUSEHOLD/FAMILY SERVICES</u>	
	LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOME MANAGEMENT SERVICES	
12		\$ 440,378
	----- <u>LOSS OF ENJOYMENT OF LIFE</u>	
	LOSS OF VALUE OF LIFE	
15		\$2,679,518

The information on this Summary of Losses is intended to summarize losses under certain given assumptions. Please refer to the report and the tables for all the opinions.

Table 1

## LOSS OF PAST WAGES

2001 - 2019

YEAR	AGE	WAGES	CUMULATE
****	***	*****	*****
2001	60	\$22,928	\$22,928
2002	61	80,037	102,965
2003	62	84,829	187,794
2004	63	89,546	277,340
2005	64	91,302	368,642
2006	65	93,092	461,734
2007	66	94,917	556,651
2008	67	96,778	653,429
2009	68	98,676	752,105
2010	69	100,610	852,715
2011	70	102,583	955,298
2012	71	104,594	1,059,892
2013	72	106,645	1,166,537
2014	73	108,736	1,275,273
2015	74	110,868	1,386,141
2016	75	113,041	1,499,182
2017	76	115,258	1,614,440
2018	77	117,517	1,731,957
2019	78	119,821	\$1,851,778
CASHMAN		\$1,851,778	

Table 2

LOSS OF PAST EMPLOYEE BENEFITS  
2001 - 2019

YEAR	AGE	EMPLOYEE BENEFITS	CUMULATE
****	***	*****	*****
2001	60	\$16,469	\$16,469
2002	61	57,491	73,960
2003	62	60,933	134,893
2004	63	64,321	199,214
2005	64	65,582	264,796
2006	65	66,868	331,664
2007	66	68,179	399,843
2008	67	69,516	469,359
2009	68	70,879	540,238
2010	69	72,268	612,506
2011	70	73,685	686,191
2012	71	75,130	761,321
2013	72	76,603	837,924
2014	73	78,105	916,029
2015	74	79,636	995,665
2016	75	81,197	1,076,862
2017	76	82,790	1,159,652
2018	77	84,412	1,244,064
2019	78	86,067	\$1,330,131
CASHMAN		\$1,330,131	

Table 3

LOSS OF PAST PERSONAL CONSUMPTION  
2001 - 2019

YEAR	AGE	PERSONAL CONSUMPTION	CUMULATE
****	***	*****	*****
2001	60	-\$6,855	-\$6,855
2002	61	-23,931	-30,786
2003	62	-25,364	-56,150
2004	63	-26,774	-82,924
2005	64	-27,299	-110,223
2006	65	-27,835	-138,058
2007	66	-28,380	-166,438
2008	67	-28,937	-195,375
2009	68	-29,504	-224,879
2010	69	-30,082	-254,961
2011	70	-30,672	-285,633
2012	71	-31,274	-316,907
2013	72	-31,887	-348,794
2014	73	-32,512	-381,306
2015	74	-33,150	-414,456
2016	75	-33,799	-448,255
2017	76	-34,462	-482,717
2018	77	-35,138	-517,855
2019	78	-35,826	-\$553,681
CASHMAN		-\$553,681	



Table 4

## ECONOMIC LOSS TO DATE

2001 - 2019

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2001	60	\$22,928	\$16,469	-\$6,855	\$32,542	\$32,542
2002	61	80,037	57,491	-23,931	113,597	146,139
2003	62	84,829	60,933	-25,364	120,398	266,537
2004	63	89,546	64,321	-26,774	127,093	393,630
2005	64	91,302	65,582	-27,299	129,585	523,215
2006	65	93,092	66,868	-27,835	132,125	655,340
2007	66	94,917	68,179	-28,380	134,716	790,056
2008	67	96,778	69,516	-28,937	137,357	927,413
2009	68	98,676	70,879	-29,504	140,051	1,067,464
2010	69	100,610	72,268	-30,082	142,796	1,210,260
2011	70	102,583	73,685	-30,672	145,596	1,355,856
2012	71	104,594	75,130	-31,274	148,450	1,504,306
2013	72	106,645	76,603	-31,887	151,361	1,655,667
2014	73	108,736	78,105	-32,512	154,329	1,809,996
2015	74	110,868	79,636	-33,150	157,354	1,967,350
2016	75	113,041	81,197	-33,799	160,439	2,127,789
2017	76	115,258	82,790	-34,462	163,586	2,291,375
2018	77	117,517	84,412	-35,138	166,791	2,458,166
2019	78	119,821	86,067	-35,826	170,062	\$2,628,228
CASHMAN		\$1,851,778	\$1,330,131	-\$553,681	\$2,628,228	

Table 5

## PRESENT VALUE OF FUTURE WAGES

2020 - 2023

YEAR	AGE	WAGES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	79	\$122,170	0.98765	\$120,661	\$120,661
2021	80	122,170	0.97546	119,172	239,833
2022	81	122,170	0.96342	117,701	357,534
2023	82	21,422	0.96131	20,593	\$378,127
WILLIAM CASHMAN				\$378,127	

Table 6

PRESENT VALUE OF FUTURE EMPLOYEE BENEFITS  
2020 - 2023

YEAR	AGE	EMPLOYEE BENEFITS	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	79	\$87,755	0.98765	\$86,671	\$86,671
2021	80	87,755	0.97546	85,601	172,272
2022	81	87,755	0.96342	84,545	256,817
2023	82	15,387	0.96131	14,792	\$271,609
WILLIAM CASHMAN				\$271,609	

Table 7

PRESENT VALUE OF FUTURE PERSONAL CONSUMPTION  
2020 - 2023

YEAR	AGE	PERSONAL CONSUMPTION	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	79	-\$36,529	0.98765	-\$36,078	-\$36,078
2021	80	-36,529	0.97546	-35,633	-71,711
2022	81	-36,529	0.96342	-35,193	-106,904
2023	82	-6,405	0.96131	-6,157	-\$113,061
WILLIAM CASHMAN				-\$113,061	

Table 8

PRESENT VALUE OF FUTURE WAGE AND BENEFIT LOSS  
2020 - 2023

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2020	79	\$120,661	\$86,671	-\$36,078	\$171,254	\$171,254
2021	80	119,172	85,601	-35,633	169,140	340,394
2022	81	117,701	84,545	-35,193	167,053	507,447
2023	82	20,593	14,792	-6,157	29,228	\$536,675
CASHMAN		\$378,127	\$271,609	-\$113,061	\$536,675	



Table 9

PRESENT VALUE OF NET WAGE AND BENEFIT LOSS  
2001 - 2023

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2001	60	\$22,928	\$16,469	-\$6,855	\$32,542	\$32,542
2002	61	80,037	57,491	-23,931	113,597	146,139
2003	62	84,829	60,933	-25,364	120,398	266,537
2004	63	89,546	64,321	-26,774	127,093	393,630
2005	64	91,302	65,582	-27,299	129,585	523,215
2006	65	93,092	66,868	-27,835	132,125	655,340
2007	66	94,917	68,179	-28,380	134,716	790,056
2008	67	96,778	69,516	-28,937	137,357	927,413
2009	68	98,676	70,879	-29,504	140,051	1,067,464
2010	69	100,610	72,268	-30,082	142,796	1,210,260
2011	70	102,583	73,685	-30,672	145,596	1,355,856
2012	71	104,594	75,130	-31,274	148,450	1,504,306
2013	72	106,645	76,603	-31,887	151,361	1,655,667
2014	73	108,736	78,105	-32,512	154,329	1,809,996
2015	74	110,868	79,636	-33,150	157,354	1,967,350
2016	75	113,041	81,197	-33,799	160,439	2,127,789
2017	76	115,258	82,790	-34,462	163,586	2,291,375
2018	77	117,517	84,412	-35,138	166,791	2,458,166
2019	78	119,821	86,067	-35,826	170,062	2,628,228
2020	79	120,661	86,671	-36,078	171,254	2,799,482
2021	80	119,172	85,601	-35,633	169,140	2,968,622
2022	81	117,701	84,545	-35,193	167,053	3,135,675
2023	82	20,593	14,792	-6,157	29,228	\$3,164,903
CASHMAN		\$2,229,905	\$1,601,740	-\$666,742	\$3,164,903	

Table 10

LOSS OF PAST HOUSEHOLD SERVICES  
2001 - 2019

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	*****	*****
2001	60	\$3,410	\$3,410
2002	61	11,443	14,853
2003	62	12,046	26,899
2004	63	12,577	39,476
2005	64	12,959	52,435
2006	65	13,464	65,899
2007	66	14,013	79,912
2008	67	14,426	94,338
2009	68	14,577	108,915
2010	69	14,756	123,671
2011	70	14,832	138,503
2012	71	24,455	162,958
2013	72	24,455	187,413
2014	73	25,083	212,496
2015	74	25,701	238,197
2016	75	26,249	264,446
2017	76	27,040	291,486
2018	77	27,831	319,317
2019	78	28,666	\$347,983
CASHMAN		\$347,983	

Table 11

PRESENT VALUE OF FUTURE HOUSEHOLD SERVICES  
2020 - 2023

YEAR	AGE	HOUSEHOLD SERVICES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	79	\$29,526	0.98765	\$29,161	\$29,161
2021	80	29,821	0.97546	29,089	58,250
2022	81	30,119	0.96342	29,017	87,267
2023	82	5,334	0.96131	5,128	\$92,395
WILLIAM CASHMAN				\$92,395	

Table 12

PRESENT VALUE OF NET HOUSEHOLD SERVICES LOSS  
2001 - 2023

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	*****	*****
2001	60	\$3,410	\$3,410
2002	61	11,443	14,853
2003	62	12,046	26,899
2004	63	12,577	39,476
2005	64	12,959	52,435
2006	65	13,464	65,899
2007	66	14,013	79,912
2008	67	14,426	94,338
2009	68	14,577	108,915
2010	69	14,756	123,671
2011	70	14,832	138,503
2012	71	24,455	162,958
2013	72	24,455	187,413
2014	73	25,083	212,496
2015	74	25,701	238,197
2016	75	26,249	264,446
2017	76	27,040	291,486
2018	77	27,831	319,317
2019	78	28,666	347,983
2020	79	29,161	377,144
2021	80	29,089	406,233
2022	81	29,017	435,250
2023	82	5,128	\$440,378
CASHMAN		\$440,378	

Table 13

LOSS OF PAST LVL OF WILLIAM  
2001 - 2019

YEAR	AGE	LVL	CUMULATE
****	***	*****	*****
2001	60	\$29,936	\$29,936
2002	61	100,782	130,718
2003	62	102,677	233,395
2004	63	106,024	339,419
2005	64	109,650	449,069
2006	65	112,436	561,505
2007	66	117,023	678,528
2008	67	117,128	795,656
2009	68	120,314	915,970
2010	69	112,119	1,028,089
2011	70	125,734	1,153,823
2012	71	127,921	1,281,744
2013	72	129,840	1,411,584
2014	73	130,827	1,542,411
2015	74	131,782	1,674,193
2016	75	134,510	1,808,703
2017	76	137,348	1,946,051
2018	77	139,971	2,086,022
2019	78	142,771	\$2,228,793
CASHMAN		\$2,228,793	



Table 14

PRESENT VALUE OF FUTURE LVL OF WILLIAM  
2020 - 2023

YEAR	AGE	LVL	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	79	\$145,626	0.98765	\$143,828	\$143,828
2021	80	145,626	0.97546	142,052	285,880
2022	81	145,626	0.96342	140,299	426,179
2023	82	25,534	0.96131	24,546	\$450,725
WILLIAM CASHMAN				\$450,725	

PRESENT VALUE OF NET LVL OF WILLIAM  
2001 - 2023

YEAR	AGE	LVL	CUMULATE
****	***	*****	*****
2001	60	\$29,936	\$29,936
2002	61	100,782	130,718
2003	62	102,677	233,395
2004	63	106,024	339,419
2005	64	109,650	449,069
2006	65	112,436	561,505
2007	66	117,023	678,528
2008	67	117,128	795,656
2009	68	120,314	915,970
2010	69	112,119	1,028,089
2011	70	125,734	1,153,823
2012	71	127,921	1,281,744
2013	72	129,840	1,411,584
2014	73	130,827	1,542,411
2015	74	131,782	1,674,193
2016	75	134,510	1,808,703
2017	76	137,348	1,946,051
2018	77	139,971	2,086,022
2019	78	142,771	2,228,793
2020	79	143,828	2,372,621
2021	80	142,052	2,514,673
2022	81	140,299	2,654,972
2023	82	24,546	\$2,679,518
CASHMAN		\$2,679,518	